UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/672,639	09/28/2000	Gary Dan Dotson	00AB154	7884

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EXAMINER
WANG, JIN-CHENG

ART UNIT	PAPER NUMBER
2672	

DATE MAILED: 11/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

	Application No.	Applicant(s)
Office Action Summary	09/672,639	DOTSON ET AL.
	Examiner	Art Unit
	Jin-Cheng Wang	2672

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____ .

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-27* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-27* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

       1.☐ ·Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____ .

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999

(AIPA) do not apply to the examination of this application as the application being examined

was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C.

122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment

by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2.   Claims 1-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Tjandrasuwita

U.S. Patent No. 6,198,469.

3.   Claim 1:

The Tjandrasuwita reference has taught a raster engine (flat panel interface 113 of figure

2) for interfacing a frame buffer in a computer system (figure 1) to one of a plurality of disparate

display types (column 4, lines 52-61), comprising:

(a) At least one control register programmable via the computer system to select a display

mode (column 5, lines 58-65), e.g., the display mode can be selected at any given time (figure 2,

and column 6, lines 1-20);

(b) A grayscale generator (gray scaling logic 301) operative to obtain pixel data from the frame buffer (column 4, lines 62-67) and programmable via the computer system to generate gray scale formatted data (to generate gray scale shading using time or frame modulation technique and the different gray shades can be generated by turning on and off the pixel) according to the selected display mode (column 6, lines 48-60); and

(c) A logic device (multiplexor 208) having a parallel output (e.g., to a LCD display monitor), the logic device (SEL2 which may originate from a control register that is programmed by the CPU as indicated by the user) being adapted to select appropriate pixel data from the grayscale generator (gray scaling logic 301 of figure 4) according to the selected display mode (see the abstract of the reference), and to provide the selected pixel data at the parallel output according to the selected display mode (figure 2, and column 6, lines 2-20).

Claim 2:

The claim 2 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of a grayscale look up table control register programmable by the computer system. However, the Tjandrasuwita reference further discloses the claimed limitation of a grayscale look up table control register programmable by the computer system (i.e., the dithering engine 204 of figure 2, and the mapping scheme may be designed to be programmable as well, column 7, lines 60-67).

Claim 3:

The claim 3 encompasses the same scope of invention as that of claim 2 except additional claimed limitation of the grayscale look up table comprising a three dimensional matrix having a frame dimension (column 11, lines 52-67, e.g., FPFC[3:0]), a vertical dimension (FPVC[3:0]), a

horizontal dimension (FPHC[3:0]), and a plurality of data entries associated with each

combination of frame, vertical, and horizontal dimensions, and wherein the data entries comprise

a plurality of matrix position enable bits adapted to indicate whether a pixel in the display is

energized (column 9, lines 43-62).

Claim 4:

The claim 4 encompasses the same scope of invention as that of claim 3 except additional

claimed limitation of the grayscale generator further comprising a frame counter, a vertical

counter, and a horizontal counter, and wherein the grayscale look up table data entries define

dithering operation for a pixel value according to the frame counter, the vertical counter, and the

horizontal counter. However, the Tjandrasuwita reference further discloses the claimed limitation

of the grayscale generator (i.e., the gray scale logic 301 of figure 4) further comprising a frame

counter, a vertical counter, and a horizontal counter (column 2, lines 47-62), and wherein the

grayscale look up table data entries (Table 1 of column 7) define dithering operation for a pixel

value according to the frame counter, the vertical counter, and the horizontal counter (column 2,

lines 47-62).

Claim 5:

The claim 5 encompasses the same scope of invention as that of claim 4 except additional

claimed limitation of the frame dimension comprising one of 3 and 4, wherein the vertical

dimension comprises one of 3 and 4, and wherein the horizontal dimension comprises one of 3

and 4. However, the Tjandrasuwita reference further discloses the claimed limitation of the

frame dimension (FPFC[3:0], see also column 9, line 64), wherein the vertical dimension

comprises one of 3 and 4 (FPVC[3:0], column 9, line 57), wherein the horizontal dimension

comprises one of 3 and 4 (FPHC[3:0], column 9, line 58).

Claim 6:

The claim 6 encompasses the same scope of invention as that of claim 5 except additional

claimed limitation of the grayscale generator adapted to translate 3 bits of pixel data for a pixel

in the display to generate grayscale formatted data for the pixel to provide 8 shades of gray

according to the selected display mode and the grayscale lookup table data entries. However, the

Tjandrasuwita reference further discloses the claimed limitation of the grayscale generator (i.e.,

the gray scaling logic 301 of figure 4) adapted to translate 3 bits of pixel data for a pixel in the

display to generate grayscale formatted data for the pixel to provide 8 shades of gray according

to the selected display mode (column 8, lines 3-18) and the grayscale lookup table data entries

(Table 1 of column 7). It is noted that in the two-to-one mapping of the mapping of 16 possible

gray-level inputs to 8 gray-levels, wherein the 4 bits of pixel data can be translated into 3 bits

(Table 1 of column 7).

Claims 7-8:

Claims 7-8 is a rephrasing of claims 5-6 in a method form. The claim is rejected for the

same reason as set forth in claims 5-6.

Claim 9:

Claim 9 is a rephrasing of claim 4 in a method form. The claim is rejected for the same

reason as set forth in claim 4.

Claim 10:

The claim 10 encompasses the same scope of invention as that of claim 6 except additional claimed limitation of the grayscale generator programmable by a user via an application program in the computer system. However, the Tjandrasuwita reference further discloses the claimed limitation of the grayscale generator (i.e., the gray scaling logic 301 of figure 4) programmable by a user via an application program in the computer system, e.g., the apparatus generates gray scale shading data in response to input color data that is programmable (see the abstract of the reference and column 4, lines 1-61 of the specification).

Claim 11:

The claim 11 encompasses the same scope of invention as that of claim 10 except additional claimed limitation of the application program being a video driver. However, the Tjandrasuwita reference further discloses the claimed limitation of the application program being a video driver (column 4, lines 9-61). The Office interprets the integrated processor circuit 101 as a video driver.

Claim 12:

Claim 12 is a rephrasing of claim 10 in a method form. The claim is rejected for the same reason as set forth in claim 10.

Claim 13:

The claim 13 encompasses the same scope of invention as that of claim 6 except additional claimed limitation of the display type. However, the Tjandrasuwita reference further discloses the claimed limitation of the display type (column 4, lines 52-61).

Claim 14:

Claim 14 is a rephrasing of claim 13 in a method form. The claim is rejected for the same reason as set forth in claim 13.

4.   Claim 15:

The Tjandrasuwita reference has taught a grayscale generator (i.e., the gray scaling logic 301 of figure 4) operatively associated with a raster engine (i.e., the flat panel interface 113 of figure 2) to generate grayscale formatted data according to a selected display mode (the mode selecting circuit 403, see also the abstract of the reference), comprising:

(a) A grayscale look up table control register programmable by a computer system (e.g., the dithering engine 204 and the mapping scheme of column 7 may be designed to be programmable as well, and see also column 8, lines 3-67);

(b) A grayscale look up table (Table 1 of column 7) programmable by the computer system using the grayscale look up table control register (e.g., the dithering engine 204 and the mapping scheme of column 7 may be designed to be programmable as well, and column 8, lines 3-67).

Claims 16-21:

Claims 16-21 is a rephrasing of claims 3-8 in a method form. The claim is rejected for the same reason as set forth respectively in claims 3-8.

5.   Claim 22:

The Tjandrasuwita reference has taught a raster engine (i.e., the flat panel interface 113 of figure 2) for interfacing a frame buffer in a computer system to one of a plurality of disparate display types (column 4, lines 52-61), comprising:

(a) Means for selecting a display mode (e.g., the mode selecting circuit 403, see also column 5, lines 58-65);

(b) Means for obtaining pixel data from the frame buffer (figure 1) and programmable via the computer system to generate grayscale formatted data according to the selected display mode (e.g., the dithering engine 204 and the mapping scheme of column 7 may be designed to be programmable as well, see also column 8, lines 3-67); and

(c) A parallel output means (multiplexor 208 having a parallel output) for selecting appropriate pixel data from the means for obtaining pixel data according to the selected display mode (gray scaling logic 301 of figure 4), and for providing the selected pixel data at a parallel output according to the selected display mode (figure 2, and column 6, lines 2-20).

Claim 23-25:

Claims 23-25 is a rephrasing of claims 15-17 in a method form. The claim is rejected for the same reason as set forth respectively in claims 15-17.

Claim 26:

Claim 26 is a rephrasing of claim 19 in a method form. The claim is rejected for the same reason as set forth respectively in claim 19.

Claim 27:

Claim 27 is a rephrasing of claim 18 in a method form. The claim is rejected for the same reason as set forth respectively in claim 18.

Conclusion

6.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kudo U.S. Patent No. 6,084,561 discloses a liquid crystal controller for controlling display of a liquid crystal display device of passive matrix type including gray scale processing.

7.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jin-Cheng Wang whose telephone number is (703) 605-1213. The examiner can normally be reached on 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on (703) 305-4713. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-6606 for regular communications and (703) 308-6606 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 395-3900.

jcw
November 20, 2002

MICHAEL RAZAVI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600